

CLAIMS

1. A gripper hook (1) in a lock stitch sewing machine, in which the sewing machine comprises a vertically mounted needle (5) for an upper thread, a stitch plate, below the stitch plate a housing which accommodates said gripper hook (1), substantially formed into an open cylinder and rotatably mounted on a horizontal axis, a bobbin basket (4) which is concentrically supported inside the gripper hook (1) and is designed as an open cylinder for receiving a bobbin case, the bobbin case housing a bobbin for an under thread and the needle (5) in executing a stitch being brought down perpendicularly to the axis of the rotary gripper hook in front of the open part of the gripper hook (1) through an opening (11) in the wall of the bobbin basket (4) so that a gripper hook tip catches the upper thread and leads the upper thread around the bobbin basket (4), thereby forming a stitch by interaction with the under thread when the needle is brought back up, **characterized in that** the gripper hook (1) has a cylindrical side wall (3) which is at least wide enough for the side wall (3) to protect the bobbin basket (4) from being struck by the needle (5) in a situation in which the needle (5) is brought downwards when a force is pressing the tip of the needle out of an alignment in which it normally runs.
2. The gripper hook (1) as claimed in claim 1, wherein the gripper hook (1) has a circular-shaped bottom plate (2) in a base plane C and wherein the side wall (3) of the gripper hook (1) extends out from the bottom plate (2) to a width w from the base plane C, and wherein the deviation s-w of the width w from a distance s spanned by the distance from the base plane C up to the edge of the opening (11) for the needle (5) in the bobbin basket (4) lies in the range $0 \text{ mm} < s-w < 0.3 \text{ mm}$, at least along that part of the side wall (3) which during rotation of the gripper hook (1) is situated just in front of the vertical line of the needle (5) and at the same time below or on a level with the tip of the needle.
3. The gripper hook (1) as claimed in claim 1 or 2, wherein the side wall (3) of the gripper hook (1) has its annular edge facing the needle (5) chamfered, so that the needle tip is guided down towards the opening (11) in the bobbin basket (4).
4. The gripper hook (1) as claimed in claim 1, wherein a part of the side wall (3) nearest the back of the side wall (3) consists of a detachable gripper hook hoop (13) fitted edge to edge with the remainder of the side wall.
5. The gripper hook (1) as claimed in claim 4, wherein the gripper hook hoop (13) is wider over at least half of its periphery.

6. The gripper hook (1) as claimed in claim 1, wherein a part of the side wall (3) nearest the back of the side wall (3) consists of a detachable gripper hook hoop (13) mounted on the inside of the side wall (3) and wherein the side wall is wider over at least half of its periphery.
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7. A method of protecting a bobbin basket from being struck by the needle in the up and down movement of the needle in a lockstitch sewing machine comprising a vertically mounted needle (5) for an upper thread, a stitch plate, below the stitch plate a housing which houses a gripper hook (1) which is substantially formed into an open cylinder and is rotatably mounted on a horizontal axis, a bobbin basket (4) which is
- 10 concentrically supported inside the gripper hook (1) and is designed as an open cylinder for receiving a bobbin case, the bobbin case housing a bobbin for an under thread, **characterized by** the following steps:
- 15 - the bobbin basket (4) is designed with a needle support (12) on the uppermost part of the wall of the bobbin basket for supporting the needle (5) in a horizontal direction in the lowest position of the needle and
- the needle support (12) is protected from the needle (5) during the sewing of stitches by a cylindrical side wall (3) of the gripper hook (1) wide enough for the side wall to cover the needle support (12) to such an extent that the needle (5) cannot strike the
- 20 needle support.
8. The use of a gripper hook in a lockstitch sewing machine as claimed in claim 1 in order to permit the use of a bobbin basket (4) made entirely of a plastic material.